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The Illustrated Dictionary of Electronics

Seventh Edition

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334 high-definition television • high-level output current

high-definition television Abbreviation, HDTV. A digital television broadcast scheme in which images have greater detail (more scanned lines and more pixels) than the images in conventional television. The audio quality is also improved.

high-density bipolar-3 code A communications or digital code in which two logic highs (ones) can occur in sequence, without the need for an intervening logic low (zero) to separate them.

high-efficiency linear amplifier A LINEAR AMPLIFIER with higher operating efficiency than is obtainable with conventional class-B linear amplifiers. Efficiencies on the order of 60% at 100% modulation are possible.

high-energy materials See HARD MAGNETIC MATERIALS.

high-energy particle 1. A SUBATOMIC PARTICLE that has been given high velocity by a particle accelerator. 2. High-speed subatomic particles emitted by the sun during a solar flare, or arriving from outer space.

high-energy physics The discipline dealing with the characteristics, properties, and applications of HIGH-ENERGY PARTICLES.

higher-order language See HIGH-LEVEL LANGUAGE.

high fidelity Abbreviation, hi-fi. Pertaining to an audio-frequency system that is very faithful to the signal it is processing (i.e., one characterized by extremely low distortion and wide frequency response).

high frequency Abbreviation, HF. Pertaining to frequencies in the 3- to 30-MHz band (wavelengths from 10 to 100 meters). Also see RADIO SPECTRUM.

high-frequency alternator A dynamo for generating radio-frequency energy.

high-frequency bias In a tape recorder, a high-frequency sinusoidal signal superimposed on the signal being recorded, for improving linearity and dynamic range.

high-frequency compensation See HIGH BOOST.

high-frequency converter See SHORTWAVE CONVERTER.

high-frequency crystal See HARMONIC CRYSTAL.

high-frequency direction finder Abbreviation, HDF. A direction finder operated at high radio frequencies (i.e., between about 3 MHz and 30 MHz).

high-frequency heating Electronic heating of materials by high-frequency energy. See, for example, DIELECTRIC HEATING and INDUCTION HEATING.

high-frequency resistance See RADIO-FREQUENCY RESISTANCE.

high-frequency speaker See TWEETER.

high-frequency trimmer 1. In older high-frequency communications receivers, a low-value variable capacitor operated in parallel with a usually front-panel tuning capacitor to set the high-frequency end of the tuning range. See, for

example, OSCILLATOR TRIMMER. 2. A small variable capacitor used in conjunction with a larger tuning capacitor, the function of which is to permit precision tuning of the larger device.

high-impedance-state output current Pertaining to tests that ensure that an integrated circuit will not overload a bus line.

high-impedance voltmeter A voltmeter having an input impedance of at least several megohms.

high-information delta modulation A compressed form of delta modulation, operating at comparatively low sample rate.

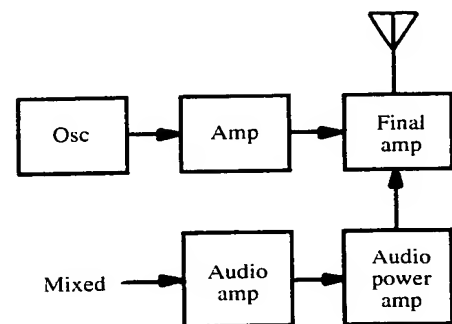
high-L circuit A tuned circuit having high inductance and low capacitance at a given frequency. Such a circuit is characterized by low selectivity and high voltage. Compare HIGH-C CIRCUIT. Also see LC RATIO.

high-level audio signal An audio-frequency signal that has been preamplified (e.g., the output of a compact-disc player). Compare LOW-LEVEL AUDIO SIGNAL.

high-level input current 1. Pertaining to the testing of intertransistor leakage in an integrated circuit (IC) having multiple emitter inputs. 2. The current into an IC input at minimum high-level voltage.

high-level language Also called *higher-order language*. A computer programming language in which the operator is easily able to communicate with the machine. It generally serves as an interface between a human programmer and the MACHINE LANGUAGE. Examples are BASIC, C, C++, COBOL, and FORTRAN.

high-level modulation In an amplitude-modulated transmitter, introduction of the audio at the final stage of radio-frequency amplification, permitting 100% modulation of the full-power signal.



high-level modulation

high-level output current 1. Pertaining to the testing of drive capability and fanout of an integrated circuit (IC). 2. The current flowing from an IC output when in the high state.

570 radioparent • radiotelegraph monitor

radioparent Transparent to X rays or other ionizing radiation. Compare RADIOPAQUE.

radiophone See RADIOTELEPHONE.

radiophoto A photograph transmitted and received by radio. Also see FACSIMILE.

radio pill See ENDORADIOSONDE.

radio prospecting The use of radio-frequency devices to locate underground or underwater metals and mineral deposits. Also see METAL LOCATOR.

radio range A radio station providing navigational aid to airplanes.

radio receiver The complete apparatus that selects, amplifies, demodulates, and reproduces a radio signal for purposes of communication, as distinct from *facsimile receiver*, *remote-control receiver*, *telemetry receiver*, *television receiver*, etc.

radiosensitivity 1. The property of being sensitive to ionizing radiation. Most photographic films have this property. 2. The extent to which a substance or device is sensitive to ionizing radiation.

radio service technician An electronics technician skilled in the repair and maintenance of radio equipment—especially receivers.

radiosonde A balloon-carried combination of radio transmitter and transducers, for sending to a ground monitoring station signals revealing such atmospheric conditions as temperature, humidity, and pressure. It is used mainly for gathering meteorological data at high altitudes.

radiosonobuoy See SONOBUOY.

radio spectroscopy A device used by radio astronomers to obtain the radio-frequency profile of a distant star or galaxy. It generally consists of a graph, obtained by scanning the radio spectrum and plotting signal intensity as a function of frequency or wavelength.

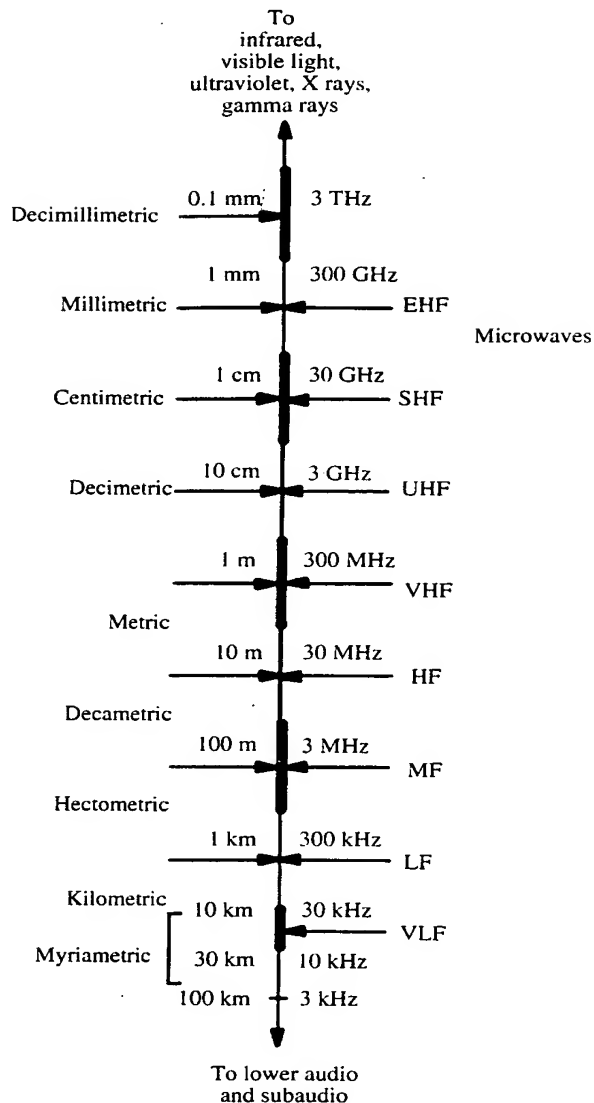
radio spectrum The continuum of frequencies useful for radio communication and control. Classified in the following manner: *Very low frequency (VLF)*, 9 to 30 kHz; *low frequency (LF)*, 30 to 300 kHz; *medium frequency (MF)*, 300 to 3000 kHz; *high frequency (HF)*, 3 to 30 MHz; *very high frequency (VHF)*, 30 to 300 MHz; *ultra high frequency (UHF)*, 300 to 3000 MHz; *super high frequency (SHF)*, 3 to 30 GHz; *extremely high frequency (EHF)*, 30 to 300 GHz.

radiostat See CRYSTAL FILTER.

radio station 1. The location at which a radio transmitter and/or receiver is/are installed. 2. The complete set of equipment for a radio receiving and/or transmitting installation, including the studio, linking apparatus, and antennas. 3. A standard broadcast station.

radio technician A professional skilled in the construction, testing, repair, and maintenance of radio equipment, and sometimes in its design, and who usually works under the supervision of a radio engineer. Also see RADIO SERVICE TECHNICIAN.

radiotelegram See RADIOGRAM.



radio spectrum

radiotelegraph 1. Pertaining to the theory and application of, and the equipment for, Morse code transmission and/or reception via radio. 2. An installation for Morse code transmission and/or reception via radio. 3. The transmission and/or reception of Morse code signals via radio.

radiotelegraph code See CONTINENTAL CODE.

radiotelegraph distress signal See SOS.

radiotelegraph monitor See KEYING MONITOR.

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speed of an aircraft or missile carrying the transducer.

vertical stylus force In disc sound reproduction, the downward force (in grams or ounces) that the stylus exerts on the disc.

vertical sweep 1. In a cathode-ray tube, especially a television picture tube, the movement of the spot up or down on the screen. Compare HORIZONTAL SWEEP. 2. The circuit that produces this sweep.

vertical sweep frequency The frequency at which vertical sweep occurs. In a television receiver, it is 60 Hz. Also called *vertical sweep rate*. Compare HORIZONTAL SWEEP FREQUENCY.

vertical sweep rate See VERTICAL SWEEP FREQUENCY.

vertical synchronization In a television receiver, synchronization of the vertical component of scanning with that of the camera. Also see VERTICAL SYNC PULSE. Compare HORIZONTAL SYNCHRONIZATION.

vertical sync pulse In a video signal, the pulse that synchronizes the vertical component of scanning in a television receiver with that of the camera, and that triggers vertical retrace and blanking. Compare HORIZONTAL SYNC PULSE.

vertical wave See VERTICALLY POLARIZED WAVE.

vertical width control See WIDTH CONTROL. 1. 2.

very high frequency Abbreviation, VHF. Radio frequencies in the range 30 MHz to 300 MHz, corresponding to free-space wavelengths of 10 meters to 1 meter. It is sometimes divided into *VHF low band* (30 MHz to 50 MHz) and *VHF high band* (50 MHz to 300 MHz). Also see RADIO SPECTRUM, 1.

very high resistance Abbreviation, VHR. Large values of resistance; usually expressed in megohms, gigohms, or teraohms.

very-high-resistance voltmeter Abbreviation, VHRVM. A voltmeter using a low-range microammeter or picoammeter and a very high value of multiplier resistance (see VOLTMETER MULTIPLIER).

very-high-speed integrated circuit An integrated circuit used for switching or other digital functions at thousands, millions, or billions of changes of state per second.

very-large-scale integration Abbreviation, VLSI. The inclusion of several complete systems, such as computers, on a single integrated-circuit chip. This can extend several orders of magnitude beyond large-scale integration (LSI).

very long range Abbreviation, VLR. Pertaining to ground radar sets having a maximum slant range of over 250 miles. Compare VERY SHORT RANGE.

very low frequency Abbreviation VLF. A radio frequency in the range 10 kHz to 30 kHz, corresponding to wavelengths between 30 kilome-

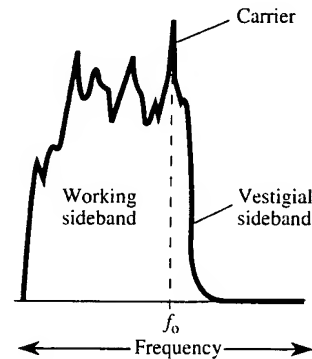
ters and 10 kilometers. Also see RADIO SPECTRUM, 1.

very low resistance Abbreviation, VLR. Values of resistance less than 1 ohm, usually expressed in milliohms or microhms.

very short range Abbreviation, VSR. Pertaining to ground radar sets having a maximum slant range of less than 25 miles. Compare VERY LONG RANGE.

vestigial 1. An effect that remains as a by-product, but that serves no directly applicable purpose. See, for example, VESTIGIAL SIDEBAND. 2. Unnecessary; extraneous.

vestigial sideband 1. A portion of one sideband in an amplitude-modulated signal, remaining after passage through a selective filter. 2. An amplitude-modulated signal in which one sideband has been partially or largely suppressed. 3. The small amount of energy emitted in the unused sideband in a single-sideband transmitter.



vestigial sideband, 2

vestigial-sideband filter A filter operated between an amplitude-modulated transmitter and an antenna to obtain a vestigial-sideband signal.

vestigial-sideband signal An amplitude-modulated signal in which one of the sidebands has been partially suppressed.

vestigial-sideband transmission Transmission of a signal containing a vestigial sideband. In television, for example, the upper sideband is transmitted fully, while the lower sideband is almost completely suppressed. The lower sideband is, therefore, a vestigial sideband.

vestigial-sideband transmitter An amplitude-modulated transmitter equipped with the filters or other subcircuits necessary for emitting a vestigial-sideband signal.

VF Abbreviation of VIDEO FREQUENCY.

V_{FB} Abbreviation for *feedback voltage* in an integrated circuit device. The term applies especially to operational amplifiers.